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BRIEF OPINION

Radiation Therapy in Palestine: Not Only Money, But Also Real Accessibility

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The Red Journal has started an interesting section called "Around the Globe," in which the level of availability, fruition, and improvement in radiation oncology is described by radiation oncologists in each country. Within this symbolic tour was a published report from Israel that caught our attention (1). In that report, we read that: "Today, Israel's population exceeds 8 million and is composed of 75% Jews and 25% non-Jews, mostly Arab." Furthermore, "[a]ccording to Israel National Cancer Registry data, in 2013, malignant disease was diagnosed in nearly 30,000 citizens. Approximately 45%, or 14,000 patients, received some form of radiation treatment."

If this incidence (1/266 inhabitants annually) is compared with the Italian incidence (1/161) (2), one sees that the incidence in Israel is lower than that in Europe.

Corn et al (1) also reported that in 8 hospitals equipped with radiation therapy, 24 linear accelerators were working, for a ratio of about 1 accelerator per 300,000 inhabitants, which is not far from the European standard (1/200,000). Thus, considering the lower incidence of cancer in Israel, the available equipment ensures a high level of care.

Recently, we studied cancer mortality and the availability of oncologic equipment in the West Bank, where no radiation oncology machines are available, despite a resident population of 4.5 million (3). In East Jerusalem, 2 linear accelerators are available to serve all Palestinian oncologic needs (1/1,000,000 inhabitants). The Palestinian Authority is building an oncology hospital, but it has not yet been established whether it will provide, or will be allowed to provide, radiation therapy.

Access to cancer treatment in developing countries, where the cancer burden is high and the drugs are expensive and paid for privately, is greatly needed (4). The availability of basic cancer treatment services, including surgery, chemotherapy, and radiation therapy, along with a clear referral system for these services, is crucial to building a comprehensive cancer service (5). Radiation therapy for cancer patients is limited and inaccessible in middle- and low-income countries, respectively, although desperately needed, especially when cancer is diagnosed at advanced stages, as happens in these countries. Radiation therapy is the most cost-effective treatment for curative and palliative cancer care, especially when combined with surgery (6).

In addition to the availability of cancer services, the published data have referred to the relationship between hospital volume and patient outcomes for cancer surgery. It has been shown that a greater hospital volume improves cancer surgery outcomes, in particular for lung and pancreatic surgery (7). In a review, Hillner et al (8) observed a positive relationship between hospital volume and cancer patient outcomes at initial cancer treatment for technologically complex surgical procedures, such as intra-abdominal,

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lung, and breast cancer and nonoperative cancer. In addition, the availability of cancer-specific technologies has not been associated with greater health care spending compared with other technologies (9).

In Palestine, 3 main oncology services are available in the West Bank: 2 governmental hospitals (Beit Jala Hospital in Bethlehem and al-Watani Hospital in Nablus) and 1 nongovernmental hospital in East Jerusalem (Augusta Victoria). In addition, 2 governmental hospitals, in Jenin and Tulkarm, have recently started to provide oncology services. Cancer patients are offered free treatment through their government health insurance, with a small charge for some drugs during cancer treatment. Cancer patients are given referrals to services in East Jerusalem, Jordan, Egypt, and other countries. Of the Palestinian Ministry of Health referrals for services outside of the West Bank, 13.5% are for patients with malignant tumors (10).

Our mortality study in the West Bank showed age-standardized ratios of 80/10,000 inhabitants for men and 50/100,000 for women, about one half the ratios found for Italy. Thus, the need for radiation therapy machines might be 1 for 400,000 inhabitants (11).

We know that large differences exist worldwide with regard to radiation oncology availability, mostly because of technological maintenance difficulties in some areas. Some have argued that installing ^{60}Co teletherapy is unsafe because of the danger of the technology being used for terrorist purposes. This has never happened; however, this unfounded argument has resulted in delayed implementation (12).

Very recently, an overview of radiation therapy worldwide showed that the costs, including the investment and operational costs and costs per treatment, vary substantially by geographic region. These cost data are also reflected in the gaps in radiation treatment options and associated resources available across different regions.

The actual coverage of cancer care needs ranges from 34% in Africa to >92% in Europe to about double that in North America. Thus, the proportional additional investments and operational costs will be as great as >200% in Africa to almost none in North America (13).

Surprisingly, the report by Corn et al (1) regarding the radiation therapy facilities did not report on the situation in the West Bank or Palestine. Furthermore, differences exist in international recognition of that area. Regardless, medical doctors are interested in people, without regard to race, religion, sex, and political differences.

It is more than just a money shortage that prevents the introduction of isotopic machines into the West Bank. The military occupation and the daily obstacles that preventing patients from freely moving about also affect cancer care outcomes.

Although financial investment in technology is undeniably necessary, many deaths from untreated cancer in low- and median-income countries also occur for political reasons in the form of the deliberate denial of access to care.

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